REMARKS

Claims 11-18 stand in the application. The only rejection is a rejection of all claims for allegedly failing to satisfy the enablement requirement of the first paragraph of 35 USC 112. The rejection is respectfully traversed, and it is requested that the application be reconsidered and all claims allowed in view of the following remarks.

The basis for the rejection is that one of ordinary skill in the art would not know what is meant by the functions MIN_U and MIN_I in claims 11, 12, 13 and 17. The undersigned was able to understand what the functions mean without first reading any of the discourse occurring during prosecution of this application, and with no other resource than the present specification. The undersigned is not one of ordinary skill in this art, but the experience is relevant nonetheless. The information as to what is meant is found in the application as follows.

Beginning at line 8 of page 10, the specification explains and defines what is meant by the "corner frequency of the co-propagating pump-to-signal modulation transfer". A quantity $|b/\alpha_P| = 2\pi f \left|\frac{1}{V_S} - \frac{1}{V_P}\right| / \alpha_P$ is shown to be a key value in the co-propagating modulation transfer function. The invention imposes the condition to have this quantity greater than one, and the specification further explains that this is equivalent to saying that the pump modulation frequency, f, must be greater than what is called the corner frequency f_C given by the formula

$$f_C = \frac{\alpha_P}{2\pi\left|\frac{1}{V_S} - \frac{1}{V_P}\right|}$$

Where α_P is the fiber loss coefficient at pump wavelength, and V_S and V_P are the group velocities of the signal and the pump. So the corner frequency is clearly defined.

The specification then goes on to explain the significance of the corner frequency, and then discusses the situation where there are plural pumps and plural signals to be amplified. Then beginning at line 23 of page 13 the specification describes that the real interest is with the pump signals that impart significant gain to a signal to be amplified.

With all of this as background, we look to the claims and see that claim 11 describes plural signals to be amplified having wavelengths λ_{S1}, λ_{S2} ... λ_{Sn} and plural pump signals $\lambda_1,\lambda_2,..\lambda_N$. The claim then recites at lines 8-11 (of the claim as set forth in the Amendment filed December 15, 2005) that the time-division multiplexing frequency is higher than the minimal corner frequency f_C of the co-propagating pump-to-signal modulation transfer function among the co-propagating pump-to-signal modulation transfer functions that implicate the signals (S_1, $S_2 \ldots S_n$) and the pumps ($P_1,P_2 \ldots P_N$), and then gives a formula for f_C. Thus, the claim includes a prose explanation of what the formula represents, and with this explanation it is clear what the formula means.

We know from the specification that for every signal S_j there will be multiple corner frequencies each corresponding to a respective one of the pump signals P_i which impart significant gain to the signal S_j. So we must determine the ***i*** corner frequencies for all of the P_i pump signals that implicate a particular signal S_j, then we must repeat that for all signals S_j, and

then we select the lowest of all of those corner frequencies. That is exactly what is represented by the formula in claim 11. Indeed, with the prose explanation that occurs immediately prior to the formula in claim 11, the formula itself could be left out and the scope of the claim would not change. It is redundant.

"Min" is conventionally used to indicate the minimum of the values in an argument. There is nothing different here. This is consistent with the various examples given by the examiner, just that the arguments are of different types. But clearly when the designation is MIN_{ij} and the argument is a function with variables having subscripts ***i*** and ***j***, it designates the minimum value of the function that results from all possible combinations of ***i*** and ***j***. That is how it is used here. But more importantly, it is clear in the context of the specification. And still more importantly, the claim itself defines and explains what the result is of the formula, and given that explanation it is inescapably clear what the formula means, including what minimum is being selected and how it is being selected.

The formula in claim 17 is the same as in claim 11, and the formulas in claims 12 and 13 are the same except that they deal with only a single signal S_K, so there is only one dimension ***i*** to the MIN function. Like claim 11, all of claims 12, 13 and 17 verbally define the minimum before setting forth the formula.

Lines 30-35 of page 13 mirror exactly the language in each of the claims that describes the formula, except that the specification expresses it in terms of the period being less than $1/f_C$ which is the same as the frequency being greater than f_C. It is believed that the discussion from line 17 of page 13 through line 6 of page 14 clearly supports what is claimed, so no further amendment to the specification should be necessary.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

An extension of time is respectfully requested, the required fee being separately authorized through the Electronic Filing System (EFS). The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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